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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,975	10/19/2005	Young Kyu Son	3449-0545PUS1	8239
2292 7590 08/06/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER MOK, ALEX W				
ART UNIT 2834		PAPER NUMBER		
NOTIFICATION DATE 08/06/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/553,975

Applicant(s)

SON ET AL.

Examiner

ALEX W. MOK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-29 is/are pending in the application.
4a) Of the above claim(s) 24-29 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16 and 18-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 19 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 10/19/05, 4/10/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-16 and 18-23, in the reply filed on 5/30/08 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7, 9-14, and 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneko et al. (Japanese Patent Document No.: JP 01295660 A).

For claim 1, Kaneko et al. disclose a stepping motor comprising a bracket (reference numeral 24, see figure 1); a housing (reference numeral 22) having a first end coupled to the bracket and a second end having a reduced width compared with the first end (reference numeral 30a, figure 1); a stator disposed in the housing to form electric field (see figure 1); a first supporting unit (reference numeral 37) formed on a first end of the bracket; a magnet (reference numeral 32) fixed corresponding to the stator to provide the magnetic field; a second supporting unit (reference numeral 33d, figure 1) supported on the second end of the housing; a rotor (see figure 1) supported by the first and second supporting units; and a stopper (reference numeral 30, figure 4)

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fitted on an opened end of the second end of the housing to support the second supporting unit.

For claim 18, Kaneko et al. disclose the claimed stepping motor as explained for claim 1, and Kaneko et al. also teach the housing having one end constituting a guide portion for guiding a second supporting unit (see figure 1), and also a third supporting unit on the bracket in which a first side of the rotor is inserted, contacting an opening portion of the housing and a first supporting unit on which a second side of the rotor is rotatably supported (figure 1).

For claim 20, Kaneko et al. disclose a second end of the housing having a reduced width compared with the first end (reference numeral 30a, figure 1), i.e. the guide portion having a reduced diameter compared with the opened portion.

For claim 23, Kaneko et al. disclose a stopper fitted on an opened end of the second end of the housing (i.e. coupled to the guide portion) to support the second supporting unit (figure 1).

For claim 2, Kaneko et al. disclose a third supporting unit formed on a second end of the bracket to support a point of the rotor (reference numeral 34, figure 1).

For claims 3 and 21, Kaneko et al. disclose a hooking part formed by bending the second end of the bracket (i.e. penetrating hole) and a supporting member inserted in the hooking part (reference numerals 24a, 34, figure 1).

For claims 4 and 19, Kaneko et al. illustrate the housing being formed in a single body (figure 1).

For claims 5 and 22, Kaneko et al. disclose the second supporting unit comprising a ball (reference numeral 39) contacting an end of the rotor; a thrust bearing (reference numeral 40b, figures 1, 2) contacting the ball; and a spring (reference numeral 40c) biased between the thrust bearing and the stopper (i.e. disposed on a rear side of the thrust bearing to attenuate impact from the thrust bearing).

For claim 7, Kaneko et al. disclose the thrust bearing contacting the second end of the housing (see figures 1, 4).

For claims 9-11, Kaneko et al. disclose the stopper being separately prepared and fitted on the second end of the housing (see figure 1, reference numeral 50, figures 6, 7), the stopper being cap-shaped (figures 4-7), and the stopper being fitted on the second end of the housing (see figure 1).

For claim 12, Kaneko et al. disclose the first supporting unit comprises a hooking part defined by bending an end of the bracket and a bearing installed on a penetrating hole of the hooking part (reference numerals 24b, 37, figure 1).

For claim 13, Kaneko et al. disclose a pocket formed on an inner surface of the stopper (reference numeral 30a, see figure 1).

For claim 14, Kaneko et al. disclose the stator and the magnet being paired and spaced from each other (see figure 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. as applied to claims 1 and 5 above, and further in view of Aoshima et al. (US Patent No.: 6255749).

For claim 6, Kaneko et al. disclose the claimed invention except for the spring being formed of a coil spring. It would have been obvious to have this configuration, since Aoshima et al. disclose a stepping motor having a coil spring at the end portion (reference numeral 27, see figure 2), and a person of ordinary skill in the art would have been able to include this technique for the purpose of improving the structure of the bearing.

For claim 16, it would have been obvious for the second end of the housing to have a diameter identical to that of a penetrating hole formed on the bracket, since this would involve a mere change in the size of the component which is generally recognized as an ordinary skill in the art, and also Aoshima et al. illustrate a similar configuration where the penetrating hole of the bracket (reference numeral 23, figure 2) and the hole at the end of the housing both have smaller diameters than the outer diameter of the motor (see figure 2).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. as applied to claims 1 and 5 above, and further in view of Ueno et al. (US Patent No.: 5811903).

For claim 8, Kaneko et al. disclose the claimed invention except for the thrust bearing being formed of synthetic resin. It would have been obvious to have this configuration since Ueno et al. already teach a motor having bearings made of resin (see column 6, lines 61-64), and a person of ordinary skill would have easily been able to select a known material such as resin for its intended use as exhibited by Ueno et al.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. as applied to claim 1 above, and further in view of Atsumi et al. (US Patent No.: 5113107).

For claim 15, it would have been obvious to have the first end of the housing being coupled to the bracket by a welding or caulking process, since Atsumi et al. disclose the housing and the bracket being welded together (see column 2, lines 35-40), and a person of ordinary skill would have been able to include this configuration for the purpose of improving the assembling precision of the bearing structure.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX W. MOK whose telephone number is (571)272-

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9084. The examiner can normally be reached on 7:30-5:00 Eastern Time, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tran Nguyen/
Primary Examiner, Art Unit 2834

/A. W. M./
Examiner, Art Unit 2834